PATENT ABSTRACTS OF JAPAN

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(71)Applicant : **TOYO TIRE & RUBBER CO LTD**

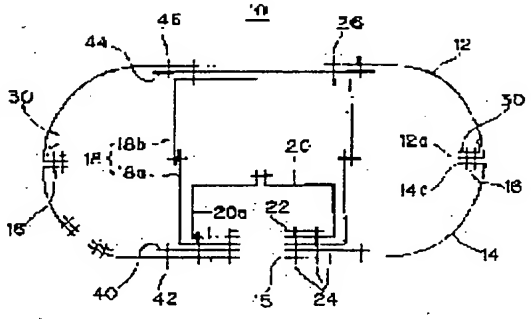
(72)Inventor : **SOGI HIDEHITO**
ARIMA MICHIYOSHI
OZAKI TORU

(54) AIR BAG FOR VEHICLE

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce the gas leaking at the sewing part at a low cost, in an air bag for vehicle composed by sewing the peripheral edges of a passenger side cloth and an inflator side cloth each other.

SOLUTION: A gas leak preventive tape 30 is sewn together to the outer peripheral sewing part 16 of a passenger side cloth 21 and an inflator side cloth 14. Between the inflator side cloth 14 and a tether forming cloth 18a sewn to its opening 15, a gas leak preventive patch 40 which is larger than a specific sewing part 24 is provided, and it is sewn with the inflator side cloth 14 by the second sewing part 42 provided at the outer periphery side of the above sewing part 24.



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CLAIMS

[Claim(s)]
[Claim 1] The air bag for cars characterized by a sheet-like object being ******(ed) by the sewing section of said rim section in the air bag for cars which sutured the rim section of two or more body cloths, and was formed in saccate.
[Claim 2] The air bag for cars which is the double chain stitch by which sewing in said sewing section forms ****** by sewing yarn in one field of the sewing section in the air bag for cars according to claim 1, and is characterized by sewing said sheet-like object on the field of the opposite hand of the field in which this ****** is formed.
[Claim 3] The air bag for cars which said two or more body cloths are the crew side cloth which makes an approximate circle configuration, and inflator side cloth in the air bag for cars according to claim 1, and is characterized by sewing said sheet-like object on one [at least] field by the side of the crew of said sewing section, and an inflator.
[Claim 4] The air bag for cars characterized by suturing with said body cloth in the air bag for cars with which it is the air bag which sutured the rim section of two or more body cloths, and was formed in saccate, and 1 or two or more attached cloths were sutured by the bag medial surface by the predetermined sewing section in the 2nd sewing section which prepared the larger sheet-like object than said predetermined sewing section in the periphery side of said predetermined sewing section.
[Claim 5] The air bag for cars characterized by for said two or more body cloths being the crew side cloth which makes an approximate circle configuration, and inflator side cloth in the air bag for cars according to claim 4, having equipped said inflator side cloth with opening for inflator mounting, and said attached cloth being sutured by this opening periphery section.
[Claim 6] The air bag for cars characterized by said attached cloth being sutured by the medial surface of said crew side cloth which said two or more body cloths are the crew side cloth which makes an approximate circle configuration, and inflator side cloth in the air bag for cars according to claim 4, and said inflator side cloth is equipped with opening for inflator mounting, and faces this opening.
[Claim 7] The air bag for cars characterized by making said sheet-like object intervene between said body cloths and said attached cloths in the air bag for cars according to claim 4 to 6.
[Claim 8] The air bag for cars with which the sewing pitch of said 2nd sewing section is characterized by being twice [more than] the sewing pitch of said predetermined sewing section in the air bag for cars according to claim 4 to 7.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the air bag of the air bag equipment for cars which is occupant crash protection.
[0002]
[Description of the Prior Art] Air bag equipment is equipment which an air bag expands and takes care of crew at the time of a car collision, comes to have the inflator which is a gas generator, and the air bag which carries out expansion expansion from the condition of having been folded up by the gas of this inflator, and is arranged in an instrument panel, a steering wheel center section, etc. of the car.
[0003] Said air bag is formed in saccate by suturing the rim section of two or more body cloths, and 1 or two or more attached cloths, such as a reinforcement cloth, and TEZA formation cloth, rectification object formation cloth, arc usually sutured by the bag medial surface by the predetermined sewing section.
[0004] Conventionally, in this air bag, according to the tension added to the sewing section of body cloths, and the sewing section of an attached cloth at the time of bag expansion, the so-called eye gap that the body cloth bridle of the sewing section opened may have occurred, and, thereby, gas leakage may have occurred. Therefore, in order to reduce or prevent this gas leakage, sticking a tape on said sewing section, or applying silicone rubber is made.
[0005]
[Problem(s) to be Solved by the Invention] However, since adhesives are need when sticking the above-mentioned tape, processing cost is high, and when applying silicone rubber, there is a problem that processing cost is high, by adding the spreading and a desiccation process.
[0006] Then, this invention aims at offering the air bag for cars which can reduce the gas leakage in this sewing section at the time of bag expansion to low cost.
[0007]
[Means for Solving the Problem] The air bag for cars of claim 1 of this invention is characterized by a sheet-like object being ******(ed) by the sewing section of said rim section in the air bag for cars which sutured the rim section of two or more body cloths, and was formed in saccate.
[0008] Since the sewing section concerned is covered with the sheet-like object sewn on with sewing yarn common to the sewing section of the rim section as it is this air bag, the gas leakage resulting from an eye gap of the sewing section by the tension at the time of bag expansion can be reduced, and **** of the body cloth in this sewing section and sewing yarn can be reduced. Moreover, since this sheet-like object is ******(ed) by the sewing section of the rim section, processing cost is low.
[0009] In claim 1, the air bag for cars of claim 2 is double chain stitch by which sewing in said sewing section forms ****** by sewing yarn in one field of the sewing section, and is characterized by sewing said sheet-like object on the field of the opposite hand of the field in which this ****** is formed.

[0010] Although it is desirable to be sewn on the field of the both sides of the sewing section from the point of the above-mentioned gas leakage and heat disadvantage prevention as for a sheet-like object, it is desirable to prepare in one field from the point of the folding nature of a bag. In this case, the above-mentioned configuration is effective. That is, in the above-mentioned configuration, the sewing section is covered by ****** by sewing yarn, and is covered with a sheet-like object in respect of the opposite hand in one field. Therefore, the above-mentioned gas leakage and **** can be reduced, without only sewing a sheet-like object on the field of said opposite hand of the sewing section, namely, spoiling the folding nature of a bag.
[0011] In claim 1, said two or more body cloths are the crew side cloth which makes an approximate circle configuration, and inflator side cloth, and the air bag for cars of claim 3 is characterized by sewing said sheet-like object on one [at least] field by the side of the crew of said sewing section, and an inflator. In this case, a sheet-like object will be arranged along with the periphery-like sewing section.
[0012] In the air bag for cars with which the air bag for cars of claim 4 is an air bag which sutured the rim section of two or more body cloths, and was formed in saccate, and 1 or two or more attached cloths were sutured by the bag medial surface by the predetermined sewing section It is characterized by suturing a larger sheet-like object than said predetermined sewing section with said body cloth in the 2nd sewing section prepared in the periphery side of said predetermined sewing section.
[0013] An attached cloth means the cloth sutured by bag medial surfaces, such as a reinforcement cloth, and TEZA formation cloth, rectification object formation cloth, here, and it differs from the body cloth which forms bag structure. Even if bag internal pressure rises that it is this air bag at the time of expansion, a tension occurs on a body cloth and an eye gap occurs in this sewing section by this, gas leakage can be reduced with the above-mentioned sheet-like object. Moreover, **** of the body cloth in said predetermined sewing section and sewing yarn can be reduced with this sheet-like object. Moreover, since this sheet-like object is arranged by sewing, processing cost is low.
[0014] In claim 4, said two or more body cloths are the crew side cloth which makes an approximate circle configuration, and inflator side cloth, said inflator side cloth is equipped with opening for inflator mounting, and the air bag for cars of claim 5 is characterized by said attached cloth being sutured by this opening periphery section.
[0015] In claim 4, said two or more body cloths are the crew side cloth which makes an approximate circle configuration, and inflator side cloth, said inflator side cloth is equipped with opening for inflator mounting, and the air bag for cars of claim 6 is characterized by said attached cloth being sutured by the medial surface of said crew side cloth which faces this opening.
[0016] The air bag for cars of claim 7 is characterized by making said sheet-like object intervene between said body cloths and said attached cloths in claims 4-6.
<TXF FR=0002 HE=250 WI=080 LX=1100 LY=0300> [0017] even if it sews this sheet-like object not only on a bag medial surface but on the lateral surface -- the above-mentioned gas leakage and heat -- it is more desirable to allot between a body cloth and attached cloths (i.e., a bag medial surface) in this way from a viewpoint of avoiding this sheet-like object contacting crew although it has the disadvantage reduction effectiveness.
[0018] The air bag for cars of claim 8 is characterized by the sewing pitch of said 2nd sewing section being twice [more than] the sewing pitch of said predetermined sewing section in claims 4-7.
[0019] Thus, the stress concentration in the sewing section of a sheet-like object can be reduced by making it larger than the sewing pitch of the sewing section which sutures the attached cloth located in the inner circumference side in the sewing pitch of the 2nd sewing section which sutures a sheet-like object.
[0020]
[Embodiment of the Invention] Hereafter, the air bag for driver's seats is taken for an example, and

the air bag for cars concerning 1 operation gestalt of this invention is explained based on a drawing.

[0021] Drawing 1 is drawing which expressed the cross section of this air bag 10 typically. It comes to form this air bag 10 in saccate by suturing both periphery section 12a and 14a in two body cloths 12 of an approximate circle configuration, i.e., crew side cloth, and inflator side cloth 14. And the periphery sewing section 16 sutured in this way is allotted to the bag inside.

[0022] This air bag 10 is equipped with TEZA 18 regulated so that spacing of the crew side cloth 12 and the inflator side cloth 14 may not spread more than predetermined length at the time of expansion, and the rectification object 20 which deflects the gas stream which an inflator emits. TEZA 18 consists of the 1st TEZA formation cloth 18a sewn on the inflator side cloth 14, and the 2nd TEZA formation cloth 18b sewn on the crew side cloth 12. 1st TEZA formation cloth 18a is sutured by the circular opening 15 for inflator mounting by which the circular base was established in the center section of the inflator side cloth 14. As for 2nd TEZA formation cloth 18b, the circular base is sutured in the center section of the crew side cloth 12. As for rectification object formation cloth 20a which forms the rectification object 20, the circular base is sutured by the opening 15 of the inflator side cloth 14. The still more nearly circular reinforcement cloth 22 is sutured by the opening 15 of the inflator side cloth 14. thus, to the opening 15 of the inflator side cloth 14 1st TEZA formation cloth 18a, rectification object formation cloth 20a, and the reinforcement cloth 22 are accumulated one by one. As shown in drawing 3 , it is sewn on by the sewing section 24 which consists of a blind stitch line of the shape of a periphery of a predetermined configuration, and on the other hand, it is sewn on the center section of the crew side cloth 12 by the sewing section 26 which 2nd TEZA formation cloth 18b becomes from the blind stitch line of the shape of a periphery of a predetermined configuration.

[0023] Here, the gas leakage prevention structure in the periphery sewing section 16 which is the suture section of the crew side cloth 12 and the inflator side cloth 14 is explained.

[0024] The sheet-like object 30 for band-like gas leakage prevention (henceforth a gas leakage prevention tape) is ******(ed) over the perimeter by this periphery sewing section 16. The gas leakage prevention tape 30 is sewn on the field by the side of the crew of the periphery sewing section 16 by sewing in the periphery sewing section 16 concerned by the detail. That is, the gas leakage prevention tape 30 is sutured together, in case sewing of the periphery sections 12a and 14a is carried out. As an ingredient of this gas leakage prevention tape 30, the film of textiles, such as textile fabrics, or the product made of synthetic resin etc. can be used, and you may be the same ingredient as the body cloth 12 and 14.

[0025] Sewing in the periphery sewing section 16 is given according to double chain stitch. Here, using two yarn, a needle thread and a bobbin thread, double chain stitch forms a blind stitch like a lock stitch for every stitch at the edge of a bobbin thread, and it means the blind stitch which twines a bobbin thread in the shape of a chain, and forms it in order to hold the blind stitch further.

[0026] As shown in drawing 2 , sewing in the periphery sewing section 16 makes the front face of the inflator side cloth 14 penetrate the sewing yarn 32 by the side of crew from the front face of the crew side cloth 12, is the front face of the inflator side cloth 14 about this penetrated partial 32a, and, specifically, is given by twining the sewing yarn 34 by the side of an inflator in the shape of a chain, and stopping it. Thereby, ****** 34a which stops the sewing yarn 32 by the side of crew is formed in the field by the side of the inflator of the periphery sewing section 16 by the sewing yarn 34 by the side of an inflator. And the gas leakage prevention tape 30 is sewn on the field of the opposite hand of the field in which this ****** 34a was formed, i.e., the field by the side of the crew of the periphery sewing section 16. In addition, drawing 2 emphasizes and shows the ****** concerned, in order to make 32 of sewing yarn, and ****** of 34 legible.

[0027] In this periphery sewing section 16, even if an eye gap occurs to sewing yarn 32 and 34 according to the tension radially produced at the time of bag expansion, when the gas leakage prevention tape 30 covers this eye gap part, gas leakage can be reduced. Moreover, **** of the body cloth 12 and 14 in the periphery sewing section 16 and sewing yarn 32 and 34 can be

reduced on this gas leakage prevention tape 30. Moreover, since sewing of the gas leakage prevention tape 30 is carried out together at the time of sewing of the periphery sewing section 16, its processing cost is low.

[0028] By forming ****** 34a by sewing yarn 34 in the field by the side of the inflator of the periphery sewing section 16, and sewing the gas leakage prevention tape 30 on the field by the side of the crew of the opposite hand especially, the field by the side of the inflator of the suture section 16 is covered by sewing yarn 34, and the field by the side of crew is covered on the gas leakage prevention tape 30. Therefore, the above-mentioned gas leakage and **** can be reduced only by sewing the gas leakage prevention tape 30 only on one field of the periphery sewing section 16.

[0029] In addition, although this gas leakage prevention sheet 30 may be sewn on the field of the both sides of the periphery sewing section 16, it is desirable to sew on a field as mentioned above [while] than the point of the folding nature of a bag.

[0030] Below, the gas leakage prevention structure in the sewing section 24 of the opening 15 of the inflator side cloth 14 is explained.

[0031] As shown in drawing 3 , between the inflator side cloth 14 and TEZA formation cloth 18a, the ****** circular sheet-like object 40 for gas leakage prevention (henceforth a gas leakage prevention patch) intervenes rather than the base of TEZA formation cloth 18a. This gas leakage prevention patch 40 is sutured by the inflator side cloth 14 by the sewing section 24 with TEZA formation cloth 18a, rectification object formation cloth 20a, and the reinforcement cloth 22, and is further sutured by the inflator side cloth 14 by the patch sewing section 42 by the side of the periphery of this sewing section 24. This patch sewing section 42 approaches the outside of the sewing section 24, and is prepared in the shape of a periphery. And the sewing pitch is set up the more than twice of the sewing pitch of the sewing section 24. As an ingredient of this gas leakage prevention patch 42, the film of textiles, such as textiles, or the product made of synthetic resin etc. can be used, and you may be the same ingredient as the body cloth 12 and 14.

[0032] In this case, even if internal pressure rises at the time of bag expansion, a tension occurs on the inflator side cloth 14 and an eye gap occurs in the sewing section 24 by this, with the gas leakage prevention patch 40 which intervened between the inflator side cloth 14 and TEZA formation cloth 18a, gas leakage can be reduced and **** of the inflator side cloth 14 in this sewing section 24 and sewing yarn can be reduced. Moreover, since it is arranged by sewing, in case the gas leakage prevention patch 40 carries out sewing of the attached cloths, such as TEZA formation cloth 18a, it can be attached easily and, therefore, processing cost is low [the patch]. Moreover, since the patch sewing section 42 is formed in the outside of the sewing section 24 which sutures attached cloths, such as TEZA formation cloth 18a, gas stops being able to flow easily between the gas leakage prevention patch 40 and the inflator side cloth 14.

[0033] Moreover, the stress concentration in the patch sewing section 42 can be reduced by enlarging the sewing pitch of the patch sewing section 42 twice [more than] the sewing pitch of the sewing section 24. Since the sewing pitch of the sewing section 24 needs to make suture reinforcement high so that it may secure many functions of TEZA 18 grade, a sewing pitch can seldom be enlarged, but since it is what sutures only the gas leakage prevention patch 40 which covers an eye gap, even if the patch sewing section 42 enlarges a sewing pitch, it is satisfactory. This sewing pitch configuration is more effective than this point.

[0034] The same gas leakage prevention structure as the sewing section 24 of the inflator side cloth 14 is also given to the sewing section 26 of the crew side cloth 12. As shown in drawing 1 , namely, between the crew side cloth 12 and TEZA formation cloth 18b While the ****** circular gas leakage prevention patch 44 intervenes and this gas leakage prevention patch 44 is sutured by the crew side cloth 12 by the sewing section 26 of TEZA formation cloth 18b rather than the base of TEZA formation cloth 18b It is sutured by the crew side cloth 12 by the patch sewing section 46 of the shape of a periphery which the periphery side of this sewing section 26 approached. And by this configuration, gas leakage can be reduced like an inflator side, and **** of the crew side

cloth 12 in the sewing section 26 and sewing yarn can be reduced.
[0035] This invention can be applied to the air bag for cars arranged on not only the air bag for driver's seats but the object for passenger seats, and other parts, and it is not restricted to the circle configuration which also described above the configuration of crew side cloth and inflator side cloth.
[0036]
[Effect of the Invention] Since the sewing section concerned is covered with the sheet-like object sewn on by sewing yarn common to the sewing section of the rim section as it is the air bag for cars of claims 1-3 of this invention, the gas leakage resulting from an eye gap of the sewing section by the tension at the time of expansion can be reduced, and **** of the body cloth in this sewing section and sewing yarn can be reduced. Moreover, since this sheet-like object is ******(ed) by the sewing section of the rim section, processing cost is low.
[0037] Even if bag internal pressure rises that it is the air bag for cars of claims 4-8 at the time of expansion, a tension occurs on a body cloth and an eye gap occurs in this sewing section according to the tension in the sewing section of an attached cloth, with a sheet-like object, gas leakage can be reduced and **** of the body cloth in the sewing section and sewing yarn can be reduced. Moreover, since this sheet-like object is arranged by sewing, processing cost is low.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the cross section of the air bag for cars concerning 1 operation gestalt of this invention.
[Drawing 2] It is the important section amplification perspective view of the suture section of the crew side cloth in the above-mentioned operation gestalt, and inflator side cloth.
[Drawing 3] It is the amplification perspective view of opening of the inflator side cloth in the above-mentioned operation gestalt.
[Description of Notations]
10 .... Air bag
12 .... Crew side cloth
12a -- The periphery section of crew side cloth
14 .... Inflator side cloth
14a -- The periphery section of inflator side cloth
16 .... Periphery sewing section
18 .... TEZA
20 .... Rectification object
22 .... Reinforcement cloth
24 26 .... Sewing section
30 .... Gas leakage prevention tape
32 34 .... Sewing yarn
34a -- ******
40 44 .... Gas leakage prevention patch
42 46 .... Patch sewing section

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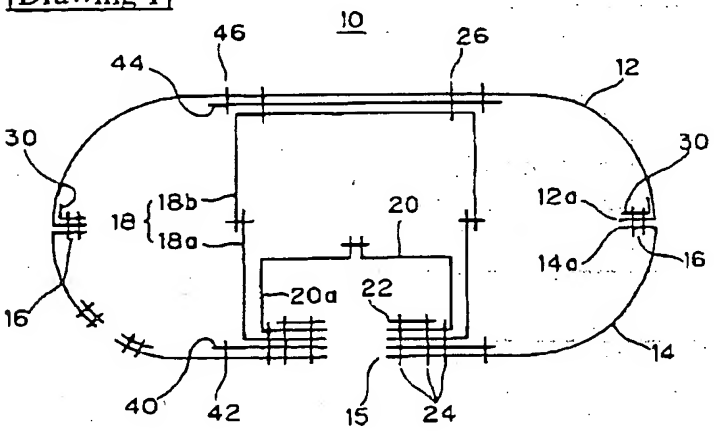
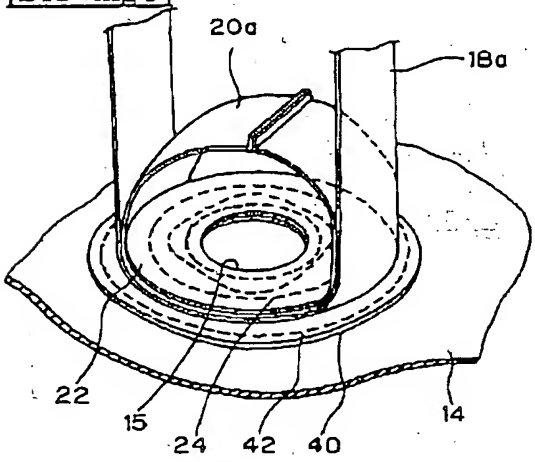
DRAWINGS

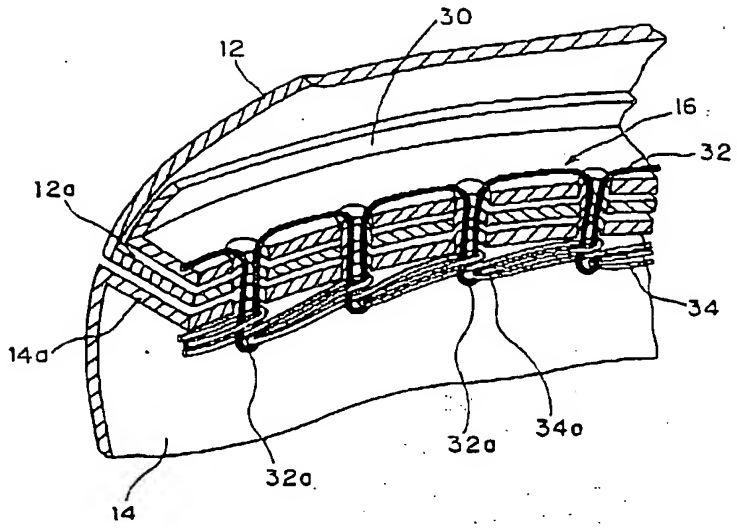
[Drawing 1]



[Drawing 3]



[Drawing 2]



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